

# HANNAH D. HOLSCHER, R.D.

Division of Nutritional Sciences  
University of Illinois at Urbana-Champaign  
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## EDUCATION

**Doctoral Candidate in Nutritional Sciences**  
University of Illinois, Urbana, Illinois

Expected graduation, May 2012

**Research Area:** The role of probiotics and prebiotics in infant formulas

**Advisor:** Kelly Tappenden, Ph.D., R.D.

**Dissertation Committee:** Sharon M. Donovan, Ph.D., R.D., Mark S. Kuhlenschmidt, Ph.D. and Michael J. Miller, Ph.D.

**Dietetic Internship Program**

2007

Ingalls Memorial Hospital, Harvey, Illinois

**Bachelor of Science in Food Science and Human Nutrition with High Honors**

2006

University of Illinois, Urbana, Illinois

## RESEARCH EXPERIENCE

2007-present

**Research Assistant:**

**Gastrointestinal Physiology and Nutrition Laboratory of Kelly Tappenden, Ph.D., R.D.**

- Complete two clinical trials and two cell culture studies related to probiotic and prebiotic ingredients in infants formulas
- Write experimental procedures for human clinical research protocols, aid in editing and finalization of protocol, coordinate IRB approvals, create and manage \$247,000 research budget, and facilitate appropriate laboratory safety certifications
- Design cell culture trial, prepare statement of work, and coordinate approval through the Office of Sponsored Programs and Research Administration (OSPRA)
- Create and manage budgets for cell culture trials, \$113,000 and \$133,000 respectively
- Develop, validate, and conduct research experiments for immunological, microbiological, functional, and structural outcomes
- Analyze data through use of SAS, interpret results, and communicate findings
- Prepare manuscripts for publication in peer-reviewed journals
- Supervise undergraduate students by demonstrating research techniques, facilitating data collection/input, and ensuring appropriate safety training
- Mentor Research Apprentice Program II (RAP II) student for 7 weeks
- Aid in short bowel syndrome piglet model experiments by assisting during surgeries, preparing parenteral and enteral nutrition formulas, and assisting with necropsies

## PUBLICATIONS

### **Manuscripts:**

**Holscher HD**, Faust KL, Czerkies LA, Litov R, Ziegler EE, Lessin H, Hatch T, Sun S and Tappenden KA. Effects of prebiotic-containing infant formula on gastrointestinal tolerance and fecal microbiota in a randomized controlled trial. *Journal of Parenteral and Enteral Nutrition*. 2012;36(1S);95-105

**Holscher HD**, Czerkies LA, Litov R, Sun S, Alexander D and Tappenden KA. Infant formula containing the probiotic *Bifidobacterium lactis* BB12 enhances intestinal antibody response in formula-fed infants: a randomized, double-blind, controlled trial. *Journal of Parenteral and Enteral Nutrition*. 2012;36(1S);106-117

### **Abstracts:**

**Holscher HD**, Davis SR, and Tappenden KA. Human milk oligosaccharides (HMO) influence intestinal maturation *in vitro*. *Journal of Parenteral and Enteral Nutrition*. 2012;36;132

**Holscher HD**, Davis SR, and Tappenden KA. A human milk oligosaccharide (HMO) influences cell proliferation in transformed human intestinal cells (CaCo-2Bbe & HT-29). *FASEB J*. 2011 25:lb187

**Holscher HD** and Tappenden KA. *Bifidobacterium lactis* Bb12 enhances intestinal antibody response in formula-fed infants. *JPGN*. 2011 51:E26.63

## INVITED SCIENTIFIC PRESENTATIONS

Do Human Milk Oligosaccharides (HMO) promote epithelial cell development? Abbott Nutrition HMO Forum, University of Illinois, August 2011.

## RESEARCH AWARDS

### **Division of Nutritional Sciences, David H. Baker Nutrition Scholar Award, 2012**

*Awarded annually to an outstanding graduate student majoring in Nutritional Sciences who has demonstrated excellence in research*

### **Abstract of Distinction, American Society of Parenteral and Enteral Nutrition's Annual Meeting Clinical Nutrition Week, 2012**

*An honor that is given to only the top 5-10% of submitted abstracts*

### **Division of Nutritional Sciences 1<sup>st</sup> Place Poster Award, Nutrition Symposium, University of Illinois, 2011**

*Awarded on a competitive basis to graduate students competing within cohorts at an annual Nutrition Symposium organized by the Division of Nutritional Science Graduate Student Association*

### **The International Society for Research in Human Milk and Lactation (ISRHML), Travel Award, Experimental Biology Conference, 2011**

*Awarded on a competitive basis to graduate students within ISRHML who present an abstract within the Lactation Research Section of the annual Experimental Biology Conference*

## **PROFESSIONAL EXPERIENCE**

**Abbott Nutrition Research & Development: Pediatric Innovation Intern** 2009 – 2011

- Conduct thorough literature reviews on potential infant formula ingredients with business relevance within the Strategic Research Cognition Platform and the Perinatal Nutrition Platform of Abbott Nutrition
- Write in-depth review papers and provide recommendations on the next steps in the innovation process: initiate research trials, introduce concepts to marketing department, or abandon further development
- Create scientific posters and presentation for internal meetings

## **TEACHING EXPERIENCE**

**Instructor- Research Apprentice Program II Scientific Communication** Summer 2011  
College of Agricultural, Consumer and Environmental Sciences (ACES), University of Illinois

- Develop curriculum and materials for 7 week course for high school students focusing on the following areas: scientific method, experimental design, quantitative reasoning, scientific writing, and scientific communication
- Provide instruction and feedback to students as they prepare scientific abstracts, papers, posters, and presentations

**Teaching Assistant - Nutritional Aspects of Disease** Fall 2008 & 2009  
Department of Food Science and Human Nutrition, University of Illinois

- Develop and coordinate 11 discussion sections to enhance curriculum by facilitating student learning of evidence based nutrition for treating diseases; create an environment for enhancing students' presentation skills while also improving constructive criticism skills, create weekly class objectives and materials, and recruit volunteer discussion leaders
- Hold weekly office hours, conduct review sessions to answer students' questions prior to 3 hour exams and 1 final exam, write study guides to aid students' studying, and create discussion topics on current nutrition issues found in public press to facilitate discussion and evaluation of the portal of nutritional topics in the media and also provide an opportunity for extra credit in the course
- Teach lectures as needed to class of 60 junior, senior, and graduate students
- Collaborate with 3 professors to design course syllabus
- Write quizzes, exams and term papers
- Objectively evaluated student progress and consistently provided meaningful, well-articulated feedback
- Manage course website including timely posting of lecture materials, review worksheets, grades, and announcements

**Discussion Leader- Principles of Nutrition** Spring 2009, 2010 & 2011  
Department of Food Science and Human Nutrition, University of Illinois

- Facilitate engaging conversations about nutrition topics over a 10 week period
- Create discussion section syllabus
- Grade quizzes and review weekly homework

## INVITED UNIVERSITY OF ILLINOIS LECTURES

### **National Science Foundation University of Illinois New Biology Fellows**

Taught two 2 hour classes on developing a scientific poster to 6 College of Agricultural, Consumer, and Environmental Sciences (ACES) fellows involved in the undergraduate research and mentoring program of NSF. July 2011

*Conducted a workshop on developing a scientific poster. Topics covered included scientific writing, data representation, and oral presentation.*

### **Pediatric Clinical Nutrition, Food Science and Human Nutrition 421**

Taught one 2 hour class on Gastrointestinal Disorders to over 30 junior, senior, and graduate nutrition students. April 2009 and March 2011

*Lectured on physiological, biochemical and nutritional aspects of disease processes related to the gastrointestinal tract relevant to infants, children and adolescents. Topics covered included constipation, diarrhea, lactose intolerance, inflammatory bowel disease, and short bowel syndrome. The role of nutrition in prevention, management and treatment of disease was covered.*

### **Nutritional Assessment and Therapy, Food Science and Human Nutrition 429**

Lead discussion on the nutrition assessment, nutrition intervention and evaluation as related to the management and treatment of lymphoma. November 2010

### **Nutritional Aspects of Disease, Food Science and Human Nutrition 420**

Taught classes on Gastrointestinal Physiology, Irritable Bowel Syndrome, Diverticular Disease, and Cardiovascular Disease to over 50 junior, senior, and graduate nutrition students. Fall 2008, 2009 and 2011

*Lectured on the role of gastrointestinal physiology in digestion, absorption and excretion as well as nutritional, biochemical, and physiological aspects of IBS and Diverticular Diseases. Topics covered included regulation of digestion and specific structure/function relationships of organs, tissues, and cells and the role of nutrition in prevention, management, and treatment of these diseases*

### **Principles of Nutrition, Food Science and Human Nutrition 220**

Taught class on Probiotics to over 60 sophomore, junior, senior, and graduate students with both nutrition and non-nutrition backgrounds. March 2008

*Lecture focused on gastrointestinal physiology, the microbiota, and the history, sources, and efficacy of probiotics.*

## TEACHING AWARDS

### **Department of Food Science and Human Nutrition Outstanding Teaching Assistant Award, 2010**

*Awarded annually to recognize an outstanding teaching assistant within the Food Science and Human Nutrition Department*

### **University of Illinois List of Teachers Ranked As Excellent by Their Students, 2008-2011**

*Received for teaching FSHN 420 (2008) and FSHN 220 (2009, 2010, 2011) based on Instructor and Course Evaluation questionnaire forms (top 10% of Teaching Assistants) maintained by the Center of Teaching Excellence.*

## **SELECTED SCHOLARSHIPS, HONORS, AND AWARDS**

### **Division of Nutritional Sciences James L. Robinson Nutrition Impact Award, 2011**

*Awarded annually to the graduate student who has made a significant impact in promoting and enhancing nutrition at the University of Illinois*

### **Division of Nutritional Sciences Margin of Excellence, University of Illinois, 2011**

*Awarded to graduate students who are presenting scientific research at national conferences*

### **Graduate College Travel Award, University of Illinois, Fall 2010 & Fall 2011**

*Awarded on a competitive basis to graduate students who are presenting scientific research at a national conference*

### **Kappa Delta Foundation Award, 2010**

*Received for outstanding mentoring of collegians through service on Advisory Board*

### **Gamma Sigma Delta Honor Society, 2007**

*University of Illinois, College of Agricultural, Consumer, and Environmental Sciences*

## **OFFICES HELD IN ORGANIZATIONS**

Student Representative, Lactation Research Interest Section, American Society for Nutrition 2011-present

Chair, Nutritional Sciences Graduate Student Association, University of Illinois 2009-2010

Co-Chair, Nutritional Sciences Graduate Student Association, University of Illinois 2008-2009

Member Education, Community Service, and Academics Advisor, Chapter Advisory Board, Kappa Delta Sorority 2008-present

## **SERVICE**

### **American Society for Nutrition Lactation RIS**

Experimental Biology planning committee, 2012

*Review and score abstracts, serve as co-chair for oral session/symposium*

### **American Society for Nutrition & Conrad Foundation**

Official judge for the 2011-2012 Spirit of Innovation Challenge Conrad Foundation's annual program, 2012

*The Spirit of Innovation Challenge invites student teams to use science, technology, engineering and math (STEM) skills to develop commercially viable products in aerospace, clean energy, and health and nutrition.*

## **CERTIFICATIONS RECEIVED FROM UNIVERSITY OF ILLINOIS**

Teaching College. Sponsored by the College of Agricultural, Consumer and Environmental Sciences and the ACES Academy of Teaching Excellence, Fall 2008.

The Illinois Certificate in Business Administration for Scientists. Sponsored by the Biotechnology Center, in cooperation with the College of Business, Spring 2007.

## **COMMITTEE WORK WITHIN UNIVERSITY OF ILLINOIS**

### **Department of Food Science and Human Nutrition**

Search Committee, Assistant/Associate Professor of Nutrition, 2009

### **Division of Nutritional Sciences**

Planning Committee, Retirement of Administrative Secretary and Division of Nutritional Sciences Director, 2009

### **Nutritional Sciences Graduate Student Association**

Planning Committee, Nutrition Symposium, 2009-2011

Planning Committee, ExplorACES booth on Phytonutrients, 2009 and 2010

Planning Committee, New Student Welcome Reception, 2009 and 2010

Planning Committee, NSGSA and DNS Fall Picnic, 2008 and 2009

Planning Committee, Holiday Party, 2008

Planning Committee, Quiz Bowl, 2008

Planning Committee, Professional Development, 2008 and 2009

## **AWARDS RECEIVED BY STUDENTS MENTORED IN LABORATORY**

Jasmine Smith, University of Illinois, College of ACES, Research Apprentice Program II, Summer 2009  
*Received Outstanding Project Poster and Outstanding Project Presentation*

Sara Ausmus, University of Illinois, College of ACES, Undergraduate Research Assistant, 2010-present  
*Received Undergraduate Research Scholarship 2011*

Jamie Doligale, University of Illinois, College of ACES, Undergraduate Research Assistant, 2010-present  
*Received Undergraduate Research Scholarship 2012*

## **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS**

American Society for Nutrition (#32751)

American Dietetic Association (#959714)